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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
|-----------------|-------------|----------------------|---------------------|

09/285,773 04/05/99 MERCALDI

G M4065.165/P1

EXAMINER

IM52/0724

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| | |
|-----------------|--------------|
| UMEZ ERONINI, L | |
| ART UNIT | PAPER NUMBER |

1765
DATE MAILED:

07/24/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

| | | | |
|------------------------------|-------------------------|-----------------|--|
| Office Action Summary | Application N . | Applicant(s) | |
| | 09/285,773 | MERCALDI ET AL. | |
| | Examiner | Art Unit | |
| | Lynette T. Umez-Eronini | 1765 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-11,13-18,22-29,33-35,39-41,82,83, and 87-93 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 87-93 is/are allowed.
- 6) ☒ Claim(s) 1-7,9-11,13-18,23-29,33-35,39-41,82, and 83 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 22, and 87 are rejected under 35 U.S.C. 102(b) as being anticipated by Sapozhniko et al. (English abstract of SU 593110A).

Sapozhniko teaches an etching solution that includes nitric and hydrofluoric acid (two different inorganic acids) in glycerine (a polyhydric alcohol), (Abstract). Non-aqueous solvents include organic liquids such as alcohols, ketones, and esters. Glycerine is a polyhydric alcohol, which reads on a non-aqueous composition of an alcohol.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2-7; and 9-11, 13-18 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sapozhniko (English abstract of SU 593110A) as applied to claims 1 and 22 respectively.

Sapozhniko differs in failing to teach the composition, wherein said alcohol is a polyhydric alcohol such as propylene, **in claims 5, 11, and 26**. Conventional non-aqueous solvents include organic liquids such as alcohols, ketones and esters. Commonly used alcohols include ethylene glycol and propylene glycol.

It would have been obvious to one having ordinary skill in the art at the time of the claimed invention to employ a conventional solvent such as propylene glycol for the purpose of producing an effective etchant.

Sapozhniko differs in failing to specify processing variables that are recited in **claims 13-18 and 33-35**.

It would have been obvious to one having ordinary skill in the art at the time of the claimed invention to employ any of a variety of operational variables such as those claimed by the applicant. They are well-known variables in the etching art and known to affect both the rate and quality of the etching process. Conducting routine experimentation to obtain the best-etched product would optimize the selection of a particular value. Changes in concentrations or other process conditions of an old process do not impart patentability unless the recited ranges are critical, i.e.; they produce a new and unexpected result. *In re Aller et al.*, 105 USPQ 233.

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5. Claims 39-41 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holoubek J (English title of CS 8801729 A).

Holoubek teaches an etching bath that is a mixture of nitric and hydrofluoric acid, which is diluted with ethylene glycol.

Holoubek differs in failing to explicitly teach the etching composition comprises propylene glycol, **in claims 39-41 and 83**; and isopropanol, **in claim 82**.

Conventional non-aqueous solvents include organic liquids such as alcohols, ketones and esters. Conventional solvents include isopropanol, ethylene glycol and propylene glycol.

It would have been obvious to one having ordinary skill in the art at the time of the claimed invention to employ a conventional non-aqueous composition such as isopropanol or propylene glycol for the purpose of producing the best etchant.

Holoubek differs in failing to specify processing variables that are recited in **claims 39-41**.

It would have been obvious to one having ordinary skill in the art at the time of the claimed invention to employ any of a variety of operational variables such as those claimed by the applicant. They are well-known variables in the etching art and known to affect both the rate and quality of the etching process. Conducting routine experimentation to obtain the best-etched product would optimize the selection of a particular value.

Allowabl Subject Matter

6. Claims 88-93 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter: Prior art lacks a teaching of a non-aqueous composition consisting essentially of: an alcohol; an acid selected from the group consisting of phosphoric, sulfuric, boric, perchloric, carbonic, or sulfurous; and at least another inorganic acid.

Conclusion

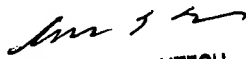
8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynette T. Umez-Eronini whose telephone number is 703-306-9074.

ltue
July 20, 2001


BENJAMIN L. UTECH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700